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Engineering, Science Academies Head for Breakup

Like an angry spouse who has finally run out of patience, the National Academy of Engineering (NAE) has served notice that it wants a divorce, albeit an amicable one, from the National Academy of Sciences (NAS). The impending split between the nation's most prestigious honorary bodies for scientists and engineers shatters a nine-year effort to find a formula that would enable the mutually suspicious groups to operate in harmony in recommending solutions to pressing national problems.

The chief reason for the split, according to a statement by NAE President Clarence H. Linder, is "the existence of apparently irreconcilable differences in arranging for the joint governance of the National Research Council," the sizable bureaucracy of staff members and committees through which the Academy provides advice to the government on matters involving science and engineering. The gist of the situation, according to high-level sources in the warring organizations, is

that each Academy is deeply suspicious of the vision and impartiality of the other, thus neither is willing to grant the other too much say in the management of an apparatus that advises the government on sensitive policy issues, ranging from the supersonic transport to automobile emissions control to the pros and cons of pesticides.

The NAE was first created in 1964 because leaders of the engineering community felt their profession was receiving scant attention from the science-dominated NAS, which has been in existence since Civil War days. The two academies serve similar functions: they honor distinguished intellectual contributions by electing worthy scientists and engineers to membership; and they appoint committees of experts to advise the federal govern-

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Congress Seeks To Save Health Programs

Two bills that would rescue major health programs that have been marked for extinction by the Nixon administration are now pending on Capitol Hill.

Rep. Paul Rogers (D-Fla.), chairman of the House subcommittee on health and environment, has introduced legislation that would reinstate the NIH and NIMH health research fellowships and traineeships that are being phased out by the administration. The legislation, known as HR 5640, would authorize \$643.5 million for the training programs for fiscal years 1974 through 1976. Students receiving assistance would have to engage in research or teaching for a period of 24 months for each full academic year for which assistance is received, or else they would have to repay the government for the support they received.

Meanwhile, the Senate Labor and Public Welfare Committee has approved a bill that would extend expiring parts of the Public Health Service Act—including community mental health centers, hospital construction, and the Regional Medical Program—while Congress debates what changes to make in programs that are being gutted by the administration economy drive.

In Brief

The Office of Technology Assessment that Congress created for itself last year remains becalmed for lack of money. Established too late to catch the regular budgetary cycle, OTA awaits a supplemental bill, which now isn't expected to pass until June or July. Meanwhile, OTA's congressional board is yet to hold its first meeting, though April 10 has been tentatively scheduled to prepare testimony for a Senate appropriations hearing.

Patrick E. Haggerty, chairman of Texas Instruments, has been named chairman of the National Council on Education Research, top policy body for the newly created National Institute of Education. Harvard's Daniel P. Moynihan, who helped create NIE, was slated for the job, but instead has become ambassador to India. Also included on the 15-member Council is Bell Labs President William O. Baker, who, along with Haggerty, is well regarded at the White House.

Report of a senior researcher at the National Bureau of Standards: "The money situation isn't too bad, but you can't make a move without answering the question, 'How soon is it going to produce a payoff?'"

Fall 1972 freshman engineering enrollments dropped 11 percent, to a total of 52,100, as compared with the previous year, according to the Engineers Joint Council, but the number of black students rose from 4831 to 5266, and the number of women, from 5303 to 6010.

NAS, NAE BREAKUP (*continued from page 1*)
ment and other contracting organizations on technical issues.

The NAE was originally created as a subordinate unit of the NAS, and it was supposed to perform its advisory function through the NRC structure. But as it turned out, the NAE set up its own separate advisory committees, and the two academies have been negotiating regularly for the past several years in an effort to find a mutually acceptable management structure. These negotiations broke down in mid-March, when the NAE Council, the organization's governing board, voted unanimously to recommend to its membership that the NAE be incorporated independently of the NAS and that a new foundation be created to raise money for the NAE.

The precipitating cause for this action was annoyance that the NAS Council, for the third or fourth time in the tortured negotiations, had repudiated an agreement that had been reached by negotiating teams from each side and approved by the NAE Council. Neither Academy will comment officially on the details, but members of the NAE Council told SGR that they were annoyed when the NAS Council rewrote the latest version of the agreement to give the NAS President greater control over the advisory committees and to prevent the NAE from conducting independent studies if the NAS leadership disapproved.

These NAE councillors said it was not so much the specific details that bothered them, as it was the repeated refusal of the NAS Council to accept

its own negotiating committee's position. "Every time we reach agreement, it's unilaterally broken by the NAS," complained one NAE councillor. "It destroys our confidence that they're really interested in working together."

Another NAE councillor attributed the breakup to "ten years of failure to find a framework for cooperation" rather than to "this latest argument." This source said there was "no one single issue" involved, but rather a "quite fundamental difference in approach and management philosophy." He said the NAE believes the Academy, which now operates on a budget of about \$35 million a year, needs a "well-planned management structure," but the NAS-NRC, in his view, is loosely organized, with the result that there is inadequate quality control over the work of advisory committees. (Top NAS officials retort, on the other hand, that the NAE is blind to industrial conflicts of interest when high-ranking corporate engineers serve on NAE advisory committees.)

The incorporation of an independent NAE must be approved by a vote of NAE members at meetings on May 3 and October 24. But incorporation of the new NAE Foundation does not require ratification of the membership and will take place shortly. Contributions to the foundation will be solicited from NAE members, some of whom are multimillionaires and many of whom hold high corporate positions; from philanthropic foundations, and from any other likely source, provided that there are, as one NAE official put it, "no strings attached to the money." One NAE councillor said that no fund-raising goal has been set, but \$5 or \$10 million might do for starters. He said the foundation would, in essence, serve as the custodian for an endowment that would provide a steady flow of funds to allow the NAE to conduct independent studies that could not be supported by government contracts.

The likely impact of the rupture is not clear. Some observers welcome the establishment of rival institutions on the theory that a plurality of advisory voices is desirable, especially since the academic scientists who dominate the NAS often have different viewpoints from the corporate engineers who rank high in NAE. Others bemoan a proliferation of academies and warn that savvy government administrators will now be able to play off one academy against the other, picking the advice which best fits their preconceived notions. In a narrow bureaucratic sense, there is no question that the rupture is a setback for the NAS, which has been trying to broaden its disciplinary reach so as to head off the formation of rival academies in such areas as medicine or behavioral sciences.

The finality of the rupture is also unclear. The statement issued by NAE said that "The Council of the NAE expressly wishes to continue its cooperation with the NAS and hopes to explore with the

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Seamans to Head NAE

Robert C. Seamans, Jr., secretary of the Air Force, has been nominated as the next president of the National Academy of Engineering. Barring a surprise write-in campaign for someone else, he is expected to win routine election to the post, which is being vacated by Clarence H. Linder.

Seamans held teaching and project-management positions at MIT, served in management positions for RCA, and was deputy administrator of NASA before assuming the Air Force secretaryship in 1969. Top leaders at the NAE view him as a dynamic administrator who can lead their organization to a position of prominence on the Washington scene. But some critics at the rival National Academy of Sciences view the choice of an Air Force secretary as evidence that the NAE is too closely identified with the "military-industrial complex."

If elected, Seamans will serve out the final year of Linder's term, and then will be eligible for re-election to a full four-year term if he desires.

US-USSR R & D Accord: More, But Not Much

A gradual increase but no sudden boom in activities can be anticipated from the accords announced last week following the first meeting of the US-USSR Joint Commission on Scientific and Technical Cooperation.

What is clear is that after two postponements of the Commission's debut and a good deal of

indecisiveness, at least on the Washington end, concerning how much R&D cooperation to offer the Soviets, both parties are approaching the relationship with caution and no evidence of haste. We will no doubt be seeing more Soviet researchers than ever before, and access to labs in the USSR will be eased a bit for American visitors, but the politically inspired match of the two research communities should not be mistaken for a raging love affair.

As is evident from Soviet efforts, clandestine and open (see P. 4), to acquire the fruits of US leadership in many fields of science and technology, the Soviets want to do business for material reasons, while the US, with very little to learn from Soviet achievements, is proceeding from political motives. Against this background, it is likely that the tables will be turned, and, in contrast to what prevailed in past years, it may be expected that the Soviets will push for closer links while the US will weigh the implications of every proposal to see what's in it in terms of keeping the Russians coming back for more but not giving them everything they want. Past scientific dealings with the Soviets were mainly at the instigation of American and Soviet scientists who were personally interested in each other's work. But the cooperative agreement has now risen above "scientific tourism" and has become an instrument in the power relationships between the two nations.

The US negotiating team was headed by NSF Director H. Guyford Stever, in his capacity as Science Adviser, a post created to fill the gap created by the impending abolition of the White House science office and the post of presidential science adviser.

The Soviets had originally intended to send V. A. Kirillin, who, as chairman of the State Committee for Science and Technology, was more or less on a protocol par with the presidential science adviser. Instead, they pleaded illness for Kirillin and sent in his place V. A. Trapeznikov, first deputy chairman of the State Committee. Whether or not illness was actually involved, the switch served the important purpose of protocol symmetry.

Sounding like a Nixon disciple, Trapeznikov told a press conference that in carrying out the agreements, "It is important that a good business-like atmosphere should reign supreme."

He also said that Nixon "stressed at our meeting that it is not important which country makes a discovery first; what's important is that the discovery should be made for the benefit of mankind"—a statement that should be noted by financially distressed research leaders who might be tempted to argue that if the US doesn't spend more on research, the Russians will get ahead.

Details of US-USSR Research Pact

Following are the six general areas and approximately 25 subjects of "action programs" spelled out in the agreement reached last week by the US-USSR Joint Commission on Scientific and Technical Cooperation.

1. Energy R&D—electric power systems, transmission lines, magnetohydrodynamics, and solar and geothermal energy.

2. Application of computers to management—theory of systems analysis applied to economics and management; computer applications and software for creating systems solutions for large general-purpose problems in management; econometric modeling, the use of computers for management of large cities, and theoretical foundations for the design, development and production of software.

3. Agricultural research—breeding, growing, and protection of farm crops; increasing production of farm animals and poultry, and mechanization of agricultural production.

4. Microbiological synthesis—US side of Joint Working Group to visit USSR "for further discussion . . . before defining priority projects for cooperative work."

5. Water resources—planning, utilization, and management of water resources; cold-weather construction techniques, automation and remote control in water resource systems, and plastics in construction.

6. Chemical catalysis—catalysis by coordination complexes and organometallic compounds; catalytic reactor modeling; indepth study of selected catalytic systems; application of catalysis to life-support systems for possible use in future space exploration, and catalysis in environmental control.

The Joint Commission also confirmed earlier reports that the Soviets would contribute \$1 million toward the operation of the Deep Sea Drilling Project, and that the USSR Academy of Sciences will become a member of the Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), which administers the project.

Soviets End-Run U.S. Embargo on Scientific Gear

A pseudonymous "Professor Otto F. Joklik" was not mentioned March 21, when representatives of the US and the USSR concluded three days of discussions in Washington and announced plans to cooperate in six areas of research.

But the activities of the Professor and his colleagues substantiate the commonly held belief that the Soviets' recent turnabout toward affability in cooperating with the US in R&D stems principally from their hunger for advanced US technology and, particularly, scientific instrumentation of military and industrial value. For the agreements (see P. 3), vague and sparse as they are, at least raise the possibility that the Soviets may eventually receive above-board what the Professor and his associates have been charged with obtaining by ruse and deception from US sources. The degree of success in defying US embargoes on sensitive items is difficult to ascertain, but Joklik & Co. have been playing the game vigorously and often successfully, and among their coups are \$450,000 of equipment for manufacturing and testing semi-conductors, an IBM 360-40 system, and, most recently, Joklik's success in buying from the US and shipping to the Soviet Union \$6800 worth of aerospace "strategic laser equipment," which, like the above-mentioned material, had been embargoed because it was deemed to have military value for the Soviets. As pieced together by SGR from various sources, the Joklik episode is as follows:

Several years ago, the Professor set up shop in Vienna, where he represented himself as "Director of the Institute of Advanced Technology and Biotechnology, Haarlem University, Holland." And he listed a Vienna address as a field "laboratory" of the Institute. In 1970, he placed orders for the laser equipment with a West German affiliate of the American manufacturer. Under Commerce Department regulations, developed with the guidance of DoD, CIA, AEC, and NASA, the equipment was strictly embargoed for shipment to Eastern-bloc nations or the Soviet Union. But Austria was an acceptable destination, and the Department granted an export license. The equipment was subsequently shipped to Joklik's Vienna "laboratory", and swiftly transhipped to the USSR.

Since Vienna is a leading hotspot for the "spook" business, it eventually came to the attention of the Commerce Department—through "information"—that the Professor might be other than what he purported to be. An investigation then produced the disclosure that "Haarlem University" is non-existent, as is the "Institute of Advanced Technology and Biotechnology" of which the Professor claimed to be Director. As for the field "laboratory"—that turned out to be Joklik's home address. In March 1971, four months after the equipment had been delivered to

the USSR, US government officials questioned Joklik. He is reported to have told them that he did not know the whereabouts of the apparatus, but expected that it would arrive in a month. They responded by banning him from "participating in any transactions involving commodities or technical data exported or to be exported from the United States."

The incident involving the semi-conductor apparatus occurred in 1966 and 1967, but has just come to light following an investigation. It involved employees of a West German firm who obtained an export license for shipment to and use of the equipment in a plant in Frankfurt. It was promptly shipped to Munich, and according to the Commerce Department "There is reason to believe that the equipment was eventually shipped to East Germany." In connection with this case, the Department states that "Most of the equipment which was furnished by US manufacturers was of a strategic nature and its exportation to certain countries would not have been authorized."

With the US and the USSR in a constant minuet over Soviet access to the American lead in computer technology, perhaps the most embarrassing incident of recent years—from the US perspective—involves the IBM 360-40, which the Commerce Department prices at \$1.6 million. The machine, ordered from the US by a Stuttgart firm, was shipped with the usual understanding that it was not to be re-exported eastward. But, early in 1971, according to US government officials, it was transshipped to the USSR.

With the US eager to expand export markets, the list of embargoed items has been diminishing in recent months. For example, it is now legal to do business with the Soviets on "hydraulic fluids formulated wholly or in part with chlorinated silicones," and numerous other items that the strategic planners, for reasons not clear to outsiders, deem valuable to Soviet power. But the embargoed list is still voluminous. Small oscilloscopes, for instance, are okay, but big ones are banned, reflecting something of an unflattering view of Soviet capabilities.

When last week's US-USSR agreement was announced, the negotiators were asked whether the embargo came up for consideration in view of stated intentions to promote scientific and technical cooperation between the two countries. The answer was "not directly." However, one prevalent line of reasoning in Washington is with the Soviets so visibly eager to tap into advanced American technology, deft management of the export controls provides a convenient means of assuring their good behavior. The "Professor Jokliks" can execute a great coup now and then, but their elaborate ruses are no substitute for buying from the catalog.—DSG

Edwards' Appointment to Health Post Draws Mixed Reaction

The Nixon administration has chosen a cost-conscious manager—Charles C. Edwards, currently commissioner of the Food and Drug Administration—to become the next assistant secretary for health in the Department of Health, Education, and Welfare (HEW).

The job has direct authority over the National Institutes of Health, the Health Services and Mental Health Administration, and the Food and Drug Administration, but not over Medicare, Medicaid, or the health programs run by other agencies.

The selection of Edwards to become the nation's "top doctor" has been praised by many leaders of the medical education and research "establishment," but it has been greeted with dismay by some advocates of expanded health programs.

The chief cause for concern is that Edwards, in some of his public utterances, has shown himself highly sympathetic to the administration's cost-cutting approach. In a speech to the American Academy of Pediatrics last October, Edwards described the 1950's and the 1960's as "the golden age of science . . . when those involved in health care tended to grow fat at the federal trough." Then he added:

"In my judgment, no longer will the emotional arguments for still more funds have quite the same impact they have had in the past . . . The present administration took charge in 1969 and for the first time since the 1950's began seriously to look at priorities for the health care dollar—it began to look for payoffs instead of promises . . . I am convinced that the results of the administration's efforts over the last four years will be measured in terms of better health care at more reasonable costs for more people."

The choice of Edwards as assistant secretary was praised in separate interviews by such bio-medical leaders as Merlin K. DuVal, Edward's predecessor as assistant secretary; Robert Q. Marston, former director of NIH; John A. D. Cooper, president of the Association of American Medical Colleges; and John R. Hogness, president of the Institute of Medicine at the National Academy of Sciences. The thrust of their comments was that Edwards is an effective organizer who can expand the authority of the frequently ineffectual office; and that he is an intelligent administrator who will not lay waste indiscriminately to good programs. As Cooper put it: "I'm glad we have someone we can at least talk to. The axeing is going to happen anyway. It's better to have this kind of person than a dummy who just becomes a bull in a china shop."

However, Sidney M. Wolfe, head of Ralph Nader's Health Research Group, described Edwards as a man of "little vision" who "will implement a

preordained dilution" of the nation's health programs, and congressional critics of the administration's cutbacks called Edward's a "party liner."

Edwards has been FDA commissioner since 1969. Before that, he was a vice-president of Booz, Allen & Hamilton, the management consultant firm, and a staff official of the American Medical Association. He is expected to win routine confirmation from the Senate.

The announcement of his nomination was made on March 13, but Edwards was actually on the job some 3 to 4 weeks earlier. He has already expanded the size of the staff and has brought two of his subordinates at FDA—Rupert Moure and Henry Simmons—along with him. Moure will assume the new post of deputy assistant secretary for administration and management, while Simmons will assume the new post of deputy assistant secretary for medical and scientific affairs.

Magruder Leaves White House For Airlines Post

William M. Magruder, whose appointment as a top White House aide on R&D affairs 18 months ago signalled the eventual downfall of the established science advisory apparatus, is leaving the Nixon administration.

Suddenly assigned to the White House in September 1971 after unsuccessfully trying to pilot the administration's SST project through Congress, Magruder was put in charge of a crash program to identify "technological opportunities" in time for inclusion in the budget that Nixon was to send to Congress four months later. The exercise, involving hundreds of consultants drawn from in and out of government, resulted in a multi-billion dollar list of ventures deemed worthy of government interest, but the budgetary outcome added up to something between \$40 million and \$700 million, depending on whose version is credited.

In any case, after the technological opportunities search was over, Magruder stayed on in his office in the Executive Office Building, explaining that he was engaged in "follow-up" studies, but it was generally felt that he was engaged in makework, pending the administration's decision about his fate.

Like all high-level officials, he was required to submit his resignation following Nixon's re-election. On March 16, the White House announced that the resignation had been accepted, and that Magruder was leaving to become executive vice president of Piedmont Airlines.

Nobelist Watson Assails Cancer Plan

The administration's "war on cancer" is seeking a quick, visible "public relations" success while undermining the fundamental biological research that is most apt to produce a cure for the disease, according to Nobel laureate James D. Watson, who is a member of the advisory board charged with advising on and monitoring the program.

In testimony before the House subcommittee on public health and environment on March 20, Watson complained:

"The sad fact is that there is no way we can effectively plan an end to all cancer . . . One way clearly not to proceed is to spend much time with detailed planning sessions by middle-aged experts. The National Cancer Institute went through one of these soporific orgies fourteen months ago, busing in box loads of cancer experts at a moment when Airlie House (a conference center) was temporarily freed from Pentagon planners putting together new encyclopedias of top secret contingency plans. With a million dollars help from a local public relations firm, a massive three-volume National Cancer Plan was assembled full of 'promising leads' for money to follow up. Unfortunately, not one of them yet smells of a real cure . . . But by careful public relations, the impression can be created that we are on to something hot."

Watson expressed "very great skepticism" that anything like a cancer vaccine will be available "for at least a decade, if not much longer." He also said it is "unrealistic" to believe that "combination of

Tobacco and Health: Kicking the Anti-Campaign

The official line of the US government is that cigarette smoking is detrimental to health, but the agency responsible for conveying that warning to the public, the National Clearinghouse for Smoking and Health, has been hit with a budget cut that will severely diminish its activities.

The Clearinghouse, which is part of HEW's Center for Disease Control, received \$2.25 million in fiscal 1972. This year, the figure dropped to \$1.4 million. In the budget for the year starting next July 1, the amount is set at \$900,000. According to an official of the Clearinghouse, the cut will not affect the size of the staff but will result in the elimination of "some public educational activities."

A number of non-government organizations, such as the American Cancer Society, carry anti-smoking messages to the public, but as far as the government is concerned, the Clearinghouse serves as a convenient token of concern without seriously offending the tobacco lobby or its powerful allies in Congress.

known anticancer drugs will turn the tide," or that available "immunological tricks" will enable scientists to kill tumor cells selectively. To stop most major cancers, he said, "we have to come up with some radically new method of treatment" that will probably depend on "chance scientific observations that have not yet been made."

The best way to make progress, he suggested, is "by strongly encouraging research on all forms of experimental biology" instead of restricting substantial funding to "direct cancer research." Thus

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Senate Commerce Committee Forms Science Unit

The Senate Commerce Committee has formed a new special subcommittee on science, technology and commerce to deal with a host of issues ranging from manpower to productivity.

Sen. Warren G. Magnuson (D-Wash.), chairman of the Commerce Committee, announced on March 23 that the subcommittee was being formed because "there is probably no national objective more important than the taming and channeling of technology towards the solution of national problems," yet the White House "has abandoned the Office of Science and Technology," and Congress "has not yet come to grips with" such problems as the "economic dislocation of scientists, engineers and communities affected by technological obsolescence and the winding down of our space and defense efforts."

Magnuson said the subcommittee's initial agenda would include a critical examination of "the relationship between our diminishing commitment to basic and applied research and our weakness in international trade;" a review of the new role of the National Bureau of Standards in harnessing technology to improve productivity; and consideration of the metric system, international standards legislation, the need for research on fire prevention technology, legislation to create a National Commission on Technology Assessment, and legislation to seek efficient alternatives to the internal combustion engine.

The subcommittee will also keep close tabs on Dr. Betsy Anker-Johnson, a Boeing Co. executive, who is President Nixon's nominee to become assistant secretary of commerce for science and technology.

The subcommittee will be chaired by Sen. John V. Tunney, (D-Calif.), and will include Sens. Adlai Stevenson (D-Ill.) and James Pearson (R-Kan.).

OST: Packing Up for Oblivion

Scheduled to dissolve June 30, as directed by President Nixon's Reorganization Plan No. 1, the once-bustling White House Office of Science and Technology (OST) is quietly trickling off into oblivion.

With its last director, Edward E. David Jr., and deputy director, John D. Baldeschwieler, resigned and gone, the senior on board is assistant director David Z. Beckler, an OST administrator who was there at the beginning and who is supervising the windup.

OST's voluminous records, containing grist for more Ph.D. theses than aficionados of science and government can comfortably contemplate, will be dispersed to various destinations, including the White House, the National Security Council, the

NAS, NAE BREAKUP (*continued from page 2*)

NAS Council what forms this cooperation might take in the future." Some NAE councillors told SGR they hope the two organizations will be able to cooperate in joint studies. One councillor even said he was "distressed" that the NAE statement seemed to emphasize that the NAE was breaking away because of "irreconcilable differences" whereas he felt that the intent of the NAE Council was to seek a separate identity that would nevertheless serve as a basis for continued close cooperation between the two academies. All sources were vague as to just how the NAE could become independent yet not "break away" from the NAS, but that is presumably a matter that will have to be worked out in the coming years.—PMB

CANCER PLAN (*continued from page 6*)

Watson deplored the fact that the administration, while boosting funding for the National Cancer Institute, has cut the budgets of most other parts of the National Institutes of Health and has terminated the training and fellowship programs which might bring "the best minds of our nation" into cancer research.

He predicted that some of the new programs launched by the Cancer Institute will waste tens of millions of dollars "by pouring out money to people essentially incompetent to do first-rate research." And while he acknowledged that the Cancer Institute has an opportunity to advance fundamental biology, he expressed "little confidence that this will happen. Instead of actively promoting the emergence of a brand new breed of younger Americans, ones superbly trained for the task of the conquest of cancer, the NCI gives the impression of also opting for the present . . . How can the administration be so callous toward the miseries of disease?"

National Archives, and the National Science Foundation, whose director takes on the title of Science Adviser when OST officially disappears.

Meanwhile, the professional staff, which once numbered 23, is down to 14 as members take up employment elsewhere. Among those who have recently departed are: William Butcher, a water resources specialist, who has returned to the University of Texas following completion of a leave of absence to serve with OST; Norman Neureiter, a Foreign Service Officer, who has returned to the State Department after handling international affairs for OST; Jack Martin, a member of OST's national security group, who has melted back into the "intelligence community," and Jack I. Hope, of OST's civilian technology group—specializing in the internal combustion engine—who has returned to consulting.

Though the Reorganization Plan said nothing about the President's Science Advisory Committee, it has not met since December, nor have any of its many panels. It may be assumed that PSAC has been wiped out too.

"The only business at hand," according to an OST staff member, "is closing down this gloomy place."

Nothing further has been heard, incidentally, about one loose-hanging matter with which OST was closely associated: the first annual presidential awards for technological innovation. The recipients have been selected and government checks bearing their names—reportedly for \$50,000 each—were once stashed away in an OST safe. But the originally stated awards date, Sept. 15, has long since passed without any word from the White House concerning a presentation ceremony.

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Is U.S. Agriculture in State of Decline?

The National Academy of Sciences has launched a study to determine whether U.S. agriculture—supposedly a “miracle” of productive efficiency and the envy of a hungry world—is unwittingly suffering a “tapering off in efficiency” and a slowdown in the flow of agricultural technology into the practice of agriculture.

The study stems from concern that various input-output curves and statistical tables published by the Department of Agriculture may reflect a “drop” in the efficiency of agricultural production.

One such table, for example, indicates that farmers are now using more feed to produce a given amount of beef cattle than they were two decades ago. Thus, for most of the 1950's, a farmer used fewer than 1,000 feed units to produce 100 pounds of cattle and calves (a feed unit is the equivalent of a pound of corn in feeding value), but since 1958 he has generally used more than 1,000 feed units. The spread ranges from 892 feed units in 1954 to 1,083 in 1970. Similarly, a farmer used only 106 feed units to produce 100 pounds of milk in the mid-1950s, but by the late 1960s, he was using more than 120 feed units to produce the same amount of milk.

Moreover, the Agriculture Department's overall productivity index, which attempts to relate farm output to such production inputs as labor, land, machinery, fertilizer and feed, showed a leveling off in 1968 and 1969 and a slight drop in 1970, though preliminary figures for 1971 and 1972 show a sharp increase in output per unit of input.

The Agriculture Department's Economic Research Service, which compiles the statistics, believes that “the so-called decline is not real,” according to Kenneth R. Farrell, deputy administrator of ERS. As Farrell and Rudie W. Slaughter, Jr., an ERS economist, explained in an interview,

the drop in the overall productivity index in 1970 was an aberration caused by the corn blight, and the drop in milk and beef production per unit of feed is nothing to worry about—it simply reflects the fact that farmers now find it economically beneficial to let their production of milk and beef become a bit more inefficient.

Thus, beef prices are now so high that farmers find it advantageous to feed their cattle huge amounts of food to add additional weight, even though the food is not used efficiently by the animals beyond a certain optimum weight. Similarly, labor costs are now so high that farmers prefer to let their dairy cows eat as much as they want rather than pay someone to monitor the feeding to be certain that each cow gets only the amount of food designed to yield the greatest amount of milk per unit of feed. In other words, the ERS acknowledges, in some areas, the physical efficiency of farm production is declining, but it argues that this is because such a decline is economically efficient.

However, the Academy is concerned that the decline may reflect more fundamental problems. Thus it has launched a study “to determine whether what appears to be a plateauing of the agricultural efficiency curve in the United States is valid, and to make explicit the implications of this phenomenon to U.S. agricultural research, education, and extension policy, and to the international scene.”

The study, which is financed by the Rockefeller Foundation, is being carried out by a committee headed by James G. Horsfall, former director of the Connecticut Agricultural Experiment Station. Horsfall said he hopes to have a report prepared by the end of the summer.

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